BES REVIEW
November 13-14, 2001

to be held at the
STC Seminar Room (formerly the CMS)
TA-3, SM-32

Tuesday, November 13, 2001

8:00 - 8:30	Continental Breakfast
8:30 - 9:00	Opening Remarks Tom Meyer and Don Parkin
9:00 – 10:00	Deformation Physics of Ultrafine Scale Materials, Harriet Kung, Amit Misra, and Richard Hoagland
10:00 - 10:30	Monolithic & Dual Phase Alloys Based on Laves Phases, Dan Thoma
10:30 - 11:00	**Break**
11:00 -12:00	Metastable Phases and Microstructures, Ricardo Schwarz Ferromagnetic Bulk Glasses, Ricardo Schwarz
12:00 - 2:00	Lunch and Tour/Materials Science Complex
2:00 – 2:45	Neutron Irradiation Induced Metastable Structures, Kurt Sickafus and Robin Grimes
2:45 - 3:15	Ion-Enhanced Synthesis of Materials, Mike Nastasi
3:15 - 5:00	**Break and Poster Session (Poster titles are listed below)**
6:30	**Dinner**

Wednesday, November 14, 2001

8:00 - 8:30	Continental Breakfast
8:30 - 9:00	Mechanical Properties, Carlos Tome/Mike Stout
9:00 – 9:30	Very High Temperature Mechanical Behavior of Complex Structural Materials, Terry Mitchell
9:30 - 10:00	Unified Theory of Evolving Microstructures, Elizabeth A. Holm/ Richard LeSar
10:00 – 10:30	**Break**
10:30 - 11:15	Ensemble-Controlled Deformation Behavior in Materials, Kathi Alexander/Mike Baskes
11:15 - 11:45	Complex Deformation in Metals; Modeling and Measurement Mark Bourke
11:45 – 12:15	Equilibrium and Non-equilibrium Statistical Mechanics of Dislocations, Richard LeSar
12:15 – 2:00	**Review Committee Lunch and Discussion**

Posters

Exploration of the Origins of Strength in Nanolayered Materials via Atomistic Modeling
R.G. Hoagland (MST-8), C.H. Henager and R.J. Kurtz (Pacific Northwest National Laboratory), H. Kung and J.P. Hirth (MST-8)

Optimum Design of Multifunctional Nanolayered Composites
A. Misra, H. Kung, J.P. Hirth, T. Yamamoto, R.G. Hoagland, T.E. Mitchell, M. Nastasi (MST-8), M.F. Hundley (MST-10), V.J. Keast (University of Cambridge, UK), and J.D. Embury (McMaster University, Canada)

Deformation of Zirconium at 77K: Modeling, Neutron Diffraction, and Mechanical Behavior
C. Tome, D.W. Brown, M.A.M.Bourke, G.C. Kaschner, and M.G. Stout (MST-8)

Quantitative Measurement of Deformation Twinning in U6%Nb

D.W. Brown, G.C. Kaschner, D.J. Thoma, M.L. Lovato, and M.G. Stout (MST-8)

Unraveling the complexity of surface phenomena by accelerated molecular dynamics

F. Montalenti (T-12), T.C. Germann (X-7), J.A. Sprague, and A.F. Voter (T-12)

The CMSN Project: Microstructural Effects on the Mechanics of Materials

R. LeSar (T-12)

Nanocomposite Magnets and Nanoscale Phenomena in Perovskite Thin Films Studied by Scanning Probe Microscopy - BES CSP Center

M.E. Hawley (MST-8)

Ultra-High Temperature Intermetallics Based on Mo5Si3

D.J. Thoma, F. Chu, R.D. Field, and J.C. Cooley (MST-6)

Dislocation Core Structures and Mobilities in MoSi2

M.I. Baskes and R.G. Hoagland (MST-8)

"Design and Synthesis of Tailored Nanostructures" (Joint DP/BES Nanoscience Network Project)

Janet Mercer-Smith, Mark Weimer, and Mark Smith (LANL); Gregory Exarhos, Li-Qiong Wang, William Samuels, Yongsoon Kim, and Jeong Ho Chang (PNNL); Glenn Foxx, Ted Baumann, Louisa Hope-Weeks (LLNL); Hau Wang, Gerold Willing, and Catherine Han (ANL); Bruce Bunker, Dale Huber, and Jun Liu (SNL)

Disorder $A_2B_2O_7$ Pyrochlores

Mohsin T. Pirzada, Department of Materials Imperial College, SW7 2BP, UK; Christopher R. Stanek, Department of Materials Imperial College, SW7 2BP, UK; Robin Grimes, LANL/ Department of Materials Imperial College, SW7 2BP, UK; Kurt E. Sickafus, LANL; John Maguire, AFRL/MLMR, Air Force Research Laboratory, Wright Patterson, AFB, OH